1991 Annual Index

Just in case you are not one of the many POULTRY DIGEST readers who saves (even has bound) every issue to form a continuous library of poultry production information, the following monthly breakdown of our indexing should be helpful in locating articles.

BREEDING AND HATCHING

Broiler breeders:
- can be grown with less light . . . JAN pg. 6
- consider behavior in . . . FEB pg. 26
- effects of low protein on males . . . MAY pg. 6
- grill opening size for . . . APR pg. 44
- handle eggs properly nest to incubator . . . JAN pg. 44
- heredity a factor in dyschondroplasia . . . FEB pg. 6
- important to control stress . . . SEP pg. 6
- late bird syndrome: questions, answers . . . AUG pg. 12
- limit feeding made more aggressive . . . MAR pg. 6
- management for vigorous poults . . . NOV pg. 28
- maternal antibody in IBD vaccination . . . JUL pg. 37
- new thinking on nutrition for . . . FEB pg. 20
- optimum fat level for . . . FEB pg. 10
- principles of vaccination programs . . . MAR pg. 14
- returns on contract production . . . JUL pg. 28
- salinomycin works well in . . . JAN pg. 6
- salty water can affect health of eggs . . . SEP pg. 6
- select eggs for uniform broilers . . . SEP pg. 35
- separate feeding of . . . APR pg. 46
- slat floors compared for . . . JUN pg. 5
- swollen heads in . . . DEC pg. 71
- understand, minimize stress in . . . MAY pg. 18
- vaccination the best it can be? . . . MAY pg. 36
- yeast culture improved hatch of fertile . . . JUN pg. 5
- yolk and serum titers correlate well . . . JAN pg. 10
- zinc bacitracin improved results of . . . OCT pg. 6

Breeder ducklings:
- Light intensity affects lay of . . . DEC pg. 6
- T-2 toxin effects differ in ducks, chickens . . . SEP pg. 8

Hatchery:
- automation speeds work . . . SEP pg. 28
- hatching egg breakout methods . . . SEP pg. 20
- hydrogen peroxide okay to sanitize eggs . . . AUG pg. 6
- shorter incubation for some turkeys . . . AUG pg. 82
- troubleshooting ventilation for . . . SEP pg. 14
- troubleshooting temperatures . . . OCT pg. 18
- transferring turkey eggs to hatcher . . . JUL pg. 35
- when to pull chicks from hatcher . . . SEP pg. 35

BROILERS

- Aluminosilicate reduces effects of aflatoxins . . . JAN pg. 8
- Clean water lines between each flock . . . JAN pg. 58
- Dead bird disposal methods research priority . . . JAN pg. 34
- Diet possible factor in sudden death syndrome . . . JAN pg. 8
- Forced air furnaces need managing . . . APR pg. 36
- Fluorescent lamps saved electricity . . . JAN pg. 6
- New infectious bronchitis variants emerging . . . JAN pg. 6
- Rexarsone improves ionophore effectiveness . . . JAN pg. 8
- Sodium, chloride levels for broilers . . . DEC pg. 6
- Salmonellae control in grow-out . . . JAN pg. 24
- Salmonellae a public relations problem . . . DEC pg. 69
- Sunflower meal with fat suitable for broilers . . . JAN pg. 10
- Triticale as a grain for broiler starter diets . . . DEC pg. 6
- Water source may be factor in dermatitis . . . FEB pg. 6
- Dietary fat can affect leg problems . . . FEB pg. 6
- IBD continued research needed . . . DEC pg. 69
- Bursal disease variants causing problems . . . FEB pg. 6
- Managing broiler feeder systems . . . APR pg. 41
- Broiler litter ash a source of phosphorus . . . MAR pg. 6
- Broiler litter, recycled paper chips for . . . DEC pg. 6
- Some mycotoxins may perpetuate leg weakness . . . MAR pg. 6
- Kenaf core suitable for broiler litter . . . APR pg. 6
- Chick mortality causes examined . . . MAY pg. 36
- Dietary fat can affect broiler leg problems . . . FEB pg. 6
- Feed particle size affected broiler growth . . . MAY pg. 6
- Litter condition effects on carcass bacteria . . . MAY pg. 6
- Chick mortality causes examined . . . MAY pg. 36
- Spiking mortality cause investigated . . . MAY pg. 38
- Feather-lysate offers another protein source . . . JUN pg. 8
- Protein lack did not affect cholera immunity . . . MAY pg. 8
- Coryza reported in California broilers . . . JUN pg. 5
- Is vaccination actually occurring? . . . JUN pg. 34
- Need strict measures to curb mycoplasma . . . JUL pg. 34
- Manpower management on large broiler farm . . . JUL pg. 20
- Survey shows returns on contract production . . . JUL pg. 28
- Compost manure in holding sheds . . . JUL pg. 36
- Humidity's effect more than air movement . . . JUL pg. 6
- Broiler weights more uniform with antibiotic . . . JUL pg. 7
- Flu viral replication also involves kidneys . . . JUL pg. 8
- New regulations delay loans for housing . . . AUG pg. 58
- High calcium level depressed broiler growth . . . AUG pg. 6
- Amprolium cut mortality in skip-a-day programs . . . AUG pg. 8
- Chicks must learn quickly to drink . . . SEP pg. 12
- Fumaric acid improved broiler body weights . . . SEP pg. 6
- Darkling beetles did not hurt performance . . . SEP pg. 6
- Feed withdrawal time affects meat texture . . . SEP pg. 6
- T-2 toxin effects differ in ducks, chickens . . . SEP pg. 8
- Coccidiosis may interact with other agents . . . SEP pg. 10
- Feeding high-protein corn to broilers, layers . . . OCT pg. 6
- Removal of vitamins, trace minerals from diet . . . OCT pg. 7
- Some ideas on husbandry, space, comfort needs . . . OCT pg. 10
- Antibiotics can improve chick livability . . . NOV pg. 6
- Day-old vaccination with killed IBD vaccine . . . NOV pg. 6

BROODING AND REARING

- All-in all-out production: control disease . . . DEC pg. 72
- Sudden death turkey problem . . . APR pg. 46
- Monitor reactions to vaccinations . . . JUL pg. 6
- Ventilation: how much air is enough? . . . JAN pg. 40
- How to clean brooder stoves and heaters . . . JAN pg. 56
- Managing mechanical ventilation systems . . . JAN pg. 60
- Forced air furnaces need managing . . . APR pg. 36
- Managing broiler feeder systems . . . APR pg. 41
- How to handle tipover poults . . . MAR pg. 39
- New strep infection reported in ducks . . . MAR pg. 40
- Chick mortality causes examined . . . MAY pg. 36
- Water source may be factor in dermatitis . . . FEB pg. 6
- Dietary fat can affect broiler leg problems . . . FEB pg. 6
- Bursal disease variants causing problems . . . FEB pg. 6
- High calcium level depressed broiler growth . . . AUG pg. 6
- First day heat for poults critical . . . AUG pg. 82
- Some tips on proper medication, vaccination . . . DEC pg. 10

ECOLOGY AND WASTE HANDLING

- Dead bird disposal methods research priority . . . JAN pg. 34
- California cage hen manure handling . . . JAN pg. 56
- Broiler litter fuel for power plants . . . MAR pg. 40
- Virginia has waste permits for poultry . . . AUG pg. 82

EGGS

- British code for catching spent hens . . . JAN pg. 57
- Plan to lengthen layer facility life . . . JAN pg. 57
- Old problems back with free range . . . JAN pg. 33
- British non-cage egg production climbing . . . JAN pg. 64
- Steps to prevent wet droppings . . . JAN pg. 65

1991 Annual Index

Just in case you are not one of the many POULTRY DIGEST readers who saves (even has bound) every issue to form a continuous library of poultry production information, the following monthly breakdown of our indexing should be helpful in locating articles.

BREEDING AND HATCHING

Broiler breeders:
- can be grown with less light . . . JAN pg. 6
- consider behavior in . . . FEB pg. 26
- effects of low protein on males . . . MAY pg. 6
- grill opening size for . . . APR pg. 44
- handle eggs properly nest to incubator . . . JAN pg. 44
- heredity a factor in dyschondroplasia . . . FEB pg. 6
- important to control stress . . . SEP pg. 6
- late bird syndrome: questions, answers . . . AUG pg. 12
- limit feeding made more aggressive . . . MAR pg. 6
- management for vigorous poults . . . NOV pg. 28
- maternal antibody in IBD vaccination . . . JUL pg. 37
- new thinking on nutrition for . . . FEB pg. 20
- optimum fat level for . . . FEB pg. 10
- principles of vaccination programs . . . MAR pg. 14
- returns on contract production . . . JUL pg. 28
- salinomycin works well in . . . JAN pg. 6
- salty water can affect health of eggs . . . SEP pg. 6
- select eggs for uniform broilers . . . SEP pg. 35
- separate feeding of . . . APR pg. 46
- slat floors compared for . . . JUN pg. 5
- swollen heads in . . . DEC pg. 71
- understand, minimize stress in . . . MAY pg. 18
- vaccination the best it can be? . . . MAY pg. 36
- yeast culture improved hatch of fertile . . . JUN pg. 5
- yolk and serum titers correlate well . . . JAN pg. 10
- zinc bacitracin improved results of . . . OCT pg. 6

Breeder ducklings:
- Light intensity affects lay of . . . DEC pg. 6
- T-2 toxin effects differ in ducks, chickens . . . SEP pg. 8

Hatchery:
- automation speeds work . . . SEP pg. 28
- hatching egg breakout methods . . . SEP pg. 20
- hydrogen peroxide okay to sanitize eggs . . . AUG pg. 6
- shorter incubation for some turkeys . . . AUG pg. 82
- troubleshooting ventilation for . . . SEP pg. 14
- troubleshooting temperatures . . . OCT pg. 18
- transferring turkey eggs to hatcher . . . JUL pg. 35
- when to pull chicks from hatcher . . . SEP pg. 35

BROILERS

- Aluminosilicate reduces effects of aflatoxins . . . JAN pg. 8
- Clean water lines between each flock . . . JAN pg. 58
- Dead bird disposal methods research priority . . . JAN pg. 34
- Diet possible factor in sudden death syndrome . . . JAN pg. 8
- Forced air furnaces need managing . . . APR pg. 36
- Fluorescent lamps saved electricity . . . JAN pg. 6
- New infectious bronchitis variants emerging . . . JAN pg. 6
- Rexarsone improves ionophore effectiveness . . . JAN pg. 8
- Sodium, chloride levels for broilers . . . DEC pg. 6
- Salmonellae control in grow-out . . . JAN pg. 24
- Salmonellae a public relations problem . . . DEC pg. 69
- Sunflower meal with fat suitable for broilers . . . JAN pg. 10
- Triticale as a grain for broiler starter diets . . . DEC pg. 6
- Water source may be factor in dermatitis . . . FEB pg. 6
- Dietary fat can affect leg problems . . . FEB pg. 6
- IBD continued research needed . . . DEC pg. 69
- Bursal disease variants causing problems . . . FEB pg. 6
- Managing broiler feeder systems . . . APR pg. 41
- Broiler litter ash a source of phosphorus . . . MAR pg. 6
- Broiler litter, recycled paper chips for . . . DEC pg. 6
- Some mycotoxins may perpetuate leg weakness . . . MAR pg. 6
- Kenaf core suitable for broiler litter . . . APR pg. 6
- Chick mortality causes examined . . . MAY pg. 36
- Dietary fat can affect broiler leg problems . . . FEB pg. 6
- Feed particle size affected broiler growth . . . MAY pg. 6
- Litter condition effects on carcass bacteria . . . MAY pg. 6
- Chick mortality causes examined . . . MAY pg. 36
- Spiking mortality cause investigated . . . MAY pg. 38
- Feather-lysate offers another protein source . . . JUN pg. 8
- Protein lack did not affect cholera immunity . . . MAY pg. 8
- Coryza reported in California broilers . . . JUN pg. 5
- Is vaccination actually occurring? . . . JUN pg. 34
- Need strict measures to curb mycoplasma . . . JUL pg. 34
- Manpower management on large broiler farm . . . JUL pg. 20
- Survey shows returns on contract production . . . JUL pg. 28
- Compost manure in holding sheds . . . JUL pg. 36
- Humidity's effect more than air movement . . . JUL pg. 6
- Broiler weights more uniform with antibiotic . . . JUL pg. 7
- Flu viral replication also involves kidneys . . . JUL pg. 8
- New regulations delay loans for housing . . . AUG pg. 58
- High calcium level depressed broiler growth . . . AUG pg. 6
- Amprolium cut mortality in skip-a-day programs . . . AUG pg. 8
- Chicks must learn quickly to drink . . . SEP pg. 12
- Fumaric acid improved broiler body weights . . . SEP pg. 6
- Darkling beetles did not hurt performance . . . SEP pg. 6
- Feed withdrawal time affects meat texture . . . SEP pg. 6
- T-2 toxin effects differ in ducks, chickens . . . SEP pg. 8
- Coccidiosis may interact with other agents . . . SEP pg. 10
- Feeding high-protein corn to broilers, layers . . . OCT pg. 6
- Removal of vitamins, trace minerals from diet . . . OCT pg. 7
- Some ideas on husbandry, space, comfort needs . . . OCT pg. 10
- Antibiotics can improve chick livability . . . NOV pg. 6
- Day-old vaccination with killed IBD vaccine . . . NOV pg. 6

BROODING AND REARING

- All-in all-out production: control disease . . . DEC pg. 72
- Sudden death turkey problem . . . APR pg. 46
- Monitor reactions to vaccinations . . . JUL pg. 6
- Ventilation: how much air is enough? . . . JAN pg. 40
- How to clean brooder stoves and heaters . . . JAN pg. 56
- Managing mechanical ventilation systems . . . JAN pg. 60
- Forced air furnaces need managing . . . APR pg. 36
- Managing broiler feeder systems . . . APR pg. 41
- How to handle tipover poults . . . MAR pg. 39
- New strep infection reported in ducks . . . MAR pg. 40
- Chick mortality causes examined . . . MAY pg. 36
- Water source may be factor in dermatitis . . . FEB pg. 6
- Dietary fat can affect broiler leg problems . . . FEB pg. 6
- Bursal disease variants causing problems . . . FEB pg. 6
- High calcium level depressed broiler growth . . . AUG pg. 6
- First day heat for poults critical . . . AUG pg. 82
- Some tips on proper medication, vaccination . . . DEC pg. 10

ECOLOGY AND WASTE HANDLING

- Dead bird disposal methods research priority . . . JAN pg. 34
- California cage hen manure handling . . . JAN pg. 56
- Broiler litter fuel for power plants . . . MAR pg. 40
- Virginia has waste permits for poultry . . . AUG pg. 82

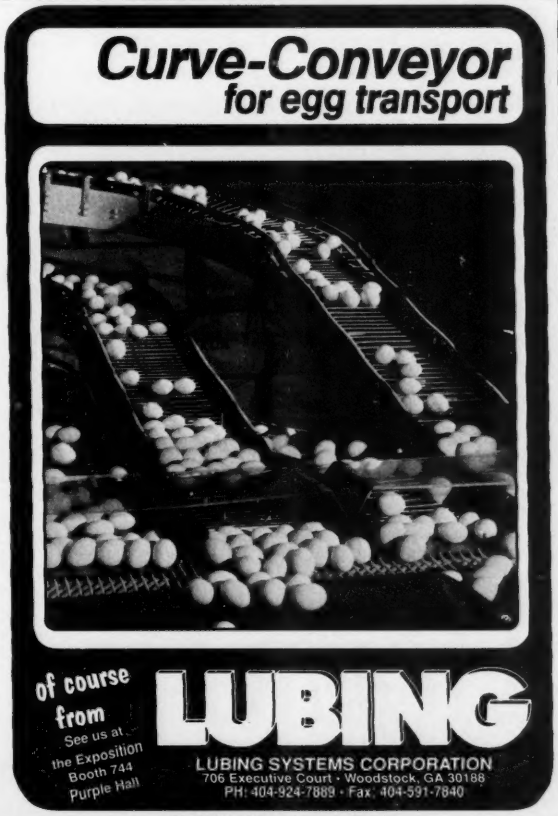
EGGS

- British code for catching spent hens . . . JAN pg. 57
- Plan to lengthen layer facility life . . . JAN pg. 57
- Old problems back with free range . . . JAN pg. 33
- British non-cage egg production climbing . . . JAN pg. 64
- Steps to prevent wet droppings . . . JAN pg. 65

56 firms own 63 per cent of nation's layers . . . MAR pg. 39
Cage space and hen age affected performance . . . FEB pg. 8
D3 metabolites strengthened bones . . . FEB pg. 6
Salmonellae penetration of egg shells . . . JUL pg. 6
Salmonellae research papers . . . MAY pg. 3
Salmonellae a public relations problem . . . DEC pg. 69
Salmonellae, breaking the link . . . DEC pg. 71
Spray vaccination handling techniques . . . MAR pg. 39
Sticky tapes best for fly monitoring . . . APR pg. 45
One nipple per four-bird cage adequate . . . APR pg. 6
More cracked eggs in cages with roosts . . . APR pg. 6
Performance unaffected by cage tier level . . . APR pg. 8
Light management for growing pullets . . . JUN pg. 10
Feed wastage in caged layers . . . APR pg. 44
How early can pullets be subjected to light? . . . MAY pg. 6
Switching calcium sources didn't affect layers . . . MAY pg. 8
Hens require sodium chloride for laying . . . MAY pg. 6
IBD increases severity of salmonellosis . . . MAY pg. 11
Manage manure to control flies . . . MAY pg. 35
Fat quality in layer feeds . . . MAY pg. 36
Layer management problems, remedies . . . JUL pg. 9
Drop in egg per capita use now less . . . JUL pg. 37
Cage flocks win points on welfare . . . JUN pg. 35
Very few salmonellae cases due to eggs . . . JUN pg. 32
Need strict measures to curb mycoplasma . . . JUL pg. 35
Added tryptophan may enhance aflatoxicosis . . . JUN pg. 5
Spent hens a good feed ingredient . . . JUL pg. 36
Breast slide cuts bone breakage for hens . . . JUL pg. 36
Cage density and diet effects on layers . . . JUL pg. 6
Cages well ahead of other systems . . . DEC pg. 70
Horizontal and vertical cage fronts compared . . . JUL pg. 7
Layers better when beak trimming was earlier . . . AUG pg. 6
Higher levels of niacin increase production . . . AUG pg. 10
Extruded eggshell product suitable in feed . . . AUG pg. 10
Dual infection found in pullets and layers . . . AUG pg. 82
How to choose pullet equipment and housing . . . SEP pg. 13
Excess amino acids did not affect layers . . . SEP pg. 8
Yolk antibody test can detect S. enteritidis . . . SEP pg. 6
Serological tests help detect S. enteritidis . . . SEP pg. 8
Abrupt changes did not affect pullet growth . . . OCT pg. 6
Feeding high-protein corn to broilers, layers . . . OCT pg. 6
If you want to stay in egg production . . . DEC pg. 70
Performance goals for brown-egg layers . . . OCT pg. 36
Hen mortality lowest in cages . . . DEC pg. 68

FEEDS AND FEEDING

Salinomycin works well in broiler breeders . . . JAN pg. 6
Diet possible factor in sudden death syndrome . . . JAN pg. 8
Sunflower meal with fat suitable for broilers . . . JAN pg. 10
New thinking on nutrition for breeder hens . . . FEB pg. 20
Managing broiler feeder systems . . . APR pg. 41
Dietary fat can affect leg problems . . . FEB pg. 6
Separate feeding of breeder flocks . . . APR pg. 46
Broiler litter ash a source of phosphorus . . . MAR pg. 6
Wheat middlings can be used in layer feeds . . . MAR pg. 8
Grill opening size for breeder flocks . . . APR pg. 44
Feed restriction of turkey breeder hens . . . APR pg. 10
Switching calcium sources didn't affect layers . . . MAY pg. 8
Feed particle size affected broiler growth . . . MAY pg. 6
Effects of low protein on breeder males . . . MAY pg. 6
Brewers' yeast an aid in pelleting . . . MAY pg. 6
Feather-lysate offers another protein source . . . JUN pg. 8
Hens require sodium chloride for laying . . . MAY pg. 6
Fat quality in layer feeds . . . MAY pg. 36
Broiler weights more uniform with antibiotic . . . JUL pg. 7
Spent hens a good feed ingredient . . . JUL pg. 36
Pellets improved feed efficiency of turkeys . . . JUN pg. 5
Some fusarium strains can cause problems . . . JUN pg. 6
Spent hens a good feed ingredient . . . JUL pg. 36
Withdrawal time affects meat texture . . . SEP pg. 6
Enzymes improved lower protein turkey feed . . . SEP pg. 10
Animal nutritionists give research data . . . DEC pg. 67
Barley advantageous in poultry ration . . . NOV pg. 26
Feeding high-protein corn to broilers, layers . . . OCT pg. 6
Pelleting: a review of value and standards . . . AUG pg. 64
Sodium, chloride levels for broilers . . . DEC pg. 6
Triticale as grain for broiler starter diets . . . DEC pg. 6

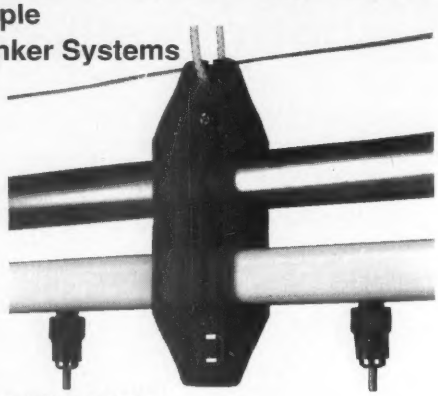


Circle No. 28 on Inquiry Card

Circle No. 29 on Inquiry Card

FarmTek

Nipple Drinker Systems



NO O-RING SEALS

... eliminates leaky couplings and nipples!

360° ACTION NIPPLE

... perfectly waters birds yet keeps litter dry!

HEAVY GAUGE SQUARE WATER PIPE

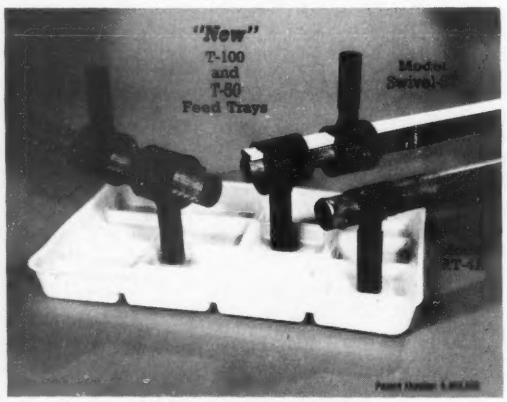
... extremely rugged and durable systems!

Call toll free for samples and a full line catalog.

1-800-FARMTEK

See us at the Exposition Booth 1617 Purple Hall

Circle No. 31 on Inquiry Card



CHICKMATE FEED TRAYS

Chickmate introduces two new feed trays. The trays have a smooth polished bottom with large radius corners for easy cleaning for sanitary reasons. They are 14 1/8 x 22 x 2 1/8. They will fit between all feeders pans.

Baby Chick Feed Dispensers

Available in three models, the Chickmate Baby Chick Feed Dispensers will adapt to virtually any existing feed line. Easily installed, the Chickmate allows more chicks to feed-increasing weight gain and reducing feed waste. All models of the Chickmate are guaranteed to save you time, money, and labor, while feeding your chicks automatically.

Manufactured of the highest grade Polyethylene available, the Chickmate allows you to guage the amount of feed desired into your feed trays or poultry paper. Once the chicks are large enough to eat from your existing feeders the Chickmate is easily turned up 180° or slid over dispensing holes to shut off the flow of feed to the Chickmate Baby Chick Feed dispensers.

Model	Adapts To
SWIVEL-C	Chore-Time Roll Formed Tube
SWIVEL-ST	Open Top Cumberland, Cablevey
RT-4A	Chore-Time Smooth Tube, Cyclone, Cumberland, Big Dutchman
T-100	Heavy Weight Feed Tray
	Available in Red, Cablevey Blue, Cyclone Blue, Orange and White
T-50	Medium Weight Feed Tray

Chickmate®

"A New Concept In Chick Feeding"

125 Evelyn S. Wade Blvd. — P.O. Box 960
Buchanan, Georgia 30113

Phone: 404-646-9327
Watts: 800-331-7500
Fax: 404-646-9329

Circle No. 32 on Inquiry Card

HOUSING AND EQUIPMENT

Ceiling fans, selecting for poultry . . . DEC pg. 71
Survey shows returns on contract production . . . JUL pg. 28
Pelleting: a review of value and standards . . . AUG pg. 64
High calcium level depressed broiler growth . . . AUG pg. 6
Higher niacin levels increase egg production . . . AUG pg. 10
Extruded eggshell product suitable in feed . . . AUG pg. 10
Amprolium cut mortality in skip-a-day programs . . . AUG pg. 8
Sesbania seed safe to feed to quail . . . AUG pg. 8
Turkey efficiency less on increasing light . . . AUG pg. 6
Fluorescent lamps saved electricity . . . JAN pg. 6
Feed and water in effective drug use . . . JUN pg. 33
Mounting trusses for more strength . . . JAN pg. 62
Plan to lengthen layer facility life . . . JAN pg. 57
New turkey ranch to grow 900,000 birds a year . . . APR pg. 12
Selecting, maintaining electric motors . . . AUG pg. 76
Manpower management on large broiler farm . . . JUL pg. 20
Survey shows returns on contract production . . . JUL pg. 28
Hen mortality lowest in cages . . . DEC pg. 68
Dutch have rules for deep litter . . . DEC pg. 70
Environment:
- Ventilating poultry houses on cold days . . . DEC pg. 68
- Equipment changes can bother poults . . . DEC pg. 70
- Darkling beetles did not hurt performance . . . SEP pg. 6
- More inlets reduce broiler migration . . . OCT pg. 7
- Temperatures affect air for turkeys . . . OCT pg. 7
- Hookup with computer cut fan running time . . . JUN pg. 5
- Tunnel-ventilated house operating costs . . . JUN pg. 8
- Control of dust in turkey houses . . . JUL pg. 37
- Forced air furnaces need managing . . . APR pg. 36
- Managing mechanical ventilation system . . . JAN pg. 60
- Humidity's effect more than air movement . . . JUL pg. 6
- Control of dust in turkey houses . . . JUL pg. 37

MANAGEMENT

Salmonellae control in grow-out . . . JAN pg. 24
Dead bird disposal methods research priority . . . JAN pg. 34
Consider health, safety of catching crews . . . JAN pg. 30
Broiler breeders can be grown with less light . . . JAN pg. 6
Fluorescent lamps saved electricity . . . JAN pg. 6
Pound heavier turkeys with intermittent light . . . JAN pg. 12
Toe nail clipping effects on tom turkeys . . . JAN pg. 12
California cage hen manure handling . . . JAN pg. 56
Steps to prevent wet droppings . . . JAN pg. 65
Clean water lines between each flock . . . JAN pg. 58
Consider behavior in breeder management . . . FEB pg. 26
Prevent overheating of poults in transit . . . MAR pg. 40
Managing broiler feeder systems . . . APR pg. 41
How to handle tipover poults . . . MAR pg. 39
Forced air furnaces need managing . . . APR pg. 38
Light management for growing pullets . . . JUN pg. 10
Grill opening size for breeder flocks . . . APR pg. 44
Sticky traps best for fly monitoring . . . APR pg. 45
Spray vaccination handling techniques . . . MAR pg. 39
How early can pullets be subjected to light? . . . MAY pg. 6
Time required to recycle turkey breeder toms . . . MAY pg. 11
Manage manure to control flies . . . MAY pg. 35
Bacteria control campylobacter . . . JUN pg. 34
Hookup with computer cut fan running time . . . JUN pg. 5
How to spot and control rats, mice . . . OCT pg. 14
How to place baits for rodent control . . . JUN pg. 32
Control of dust in turkey houses . . . JUL pg. 37
Stress important in salmonellae control . . . JUN pg. 35
People management in turkey business . . . JUN pg. 32
Cage density and diet effects on layers . . . JUL pg. 6
Breast buttons fewer with increasing light . . . JUL pg. 8
How to choose pullet equipment and housing . . . SEP pg. 13
Salty water can affect hatch of fertile eggs . . . SEP pg. 6
Biologicals eyed in pest management . . . OCT pg. 28
Know the risks with F strain vaccine . . . OCT pg. 6
Timing in frequent manure cleanout . . . DEC pg. 68
Increasing photoperiod provides better health . . . JUN pg. 14
Light management for growing pullets . . . JUN pg. 10
Some questions, answers on chick anemia agent . . . JUL pg. 12
Selecting, maintaining electric motors . . . AUG pg. 76
Turkey efficiency less on increasing light . . . AUG pg. 6
Layers did better with early beak trimming . . . AUG pg. 6
First day heat for poults critical . . . AUG pg. 82
Virginia has waste permits for poultry . . . AUG pg. 82
Final beak trimming timing is important . . . APR pg. 8
Forced air furnaces need managing . . . APR pg. 36
Managing broiler feeder systems . . . APR pg. 41
Grill opening size for breeder flocks . . . APR pg. 44

Sticky tapes best for fly monitoring . . . APR pg. 45
Layer management problems, remedies . . . JUL pg. 9

MISCELLANEOUS

Animal rightists aim is to decide for us . . . JUN pg. 31
Animal rights groups are well funded . . . MAY pg. 38
Animal welfare aim "no animals for food" . . . JAN pg. 65
Arguments for use of animals by humans . . . JUN pg. 32
British non-cage egg production climbing . . . JAN pg. 64
Cage flocks win points on welfare . . . JUN pg. 35
Old problems back with free range . . . JAN pg. 33
Poultry Industry Centre in permanent location . . . JAN pg. 67
Four broiler firms have 41 per cent of volume . . . MAR pg. 38
15 leading turkey companies in 1990 . . . MAR pg. 38
Salmonellae survive on skin and feathers . . . APR pg. 6
New regulations delay loans for housing . . . AUG pg. 58
Regional research centers suggested . . . APR pg. 47
The cholesterol conspiracy exposed . . . MAY pg. 43
Greenhouse market for poultry manure . . . JUN pg. 34
Consultant could supply expertise . . . JUL pg. 35
Virginia has waste permits for poultry . . . AUG pg. 82
Geneticist discovers new research method . . . OCT pg. 36
Need umbrella group to fight rightists . . . OCT pg. 36
Gentian violet banned for use in animal feeds . . . OCT pg. 32

POULTRY HEALTH

All-in all-out production: control diseases . . . DEC pg. 72
Diseases: a continuing challenge . . . JAN pg. 18
Salinomycin works well in broiler breeders . . . JAN pg. 6
Diet possible factor in sudden death syndrome . . . JAN pg. 8
Late bird syndrome: some questions, answers . . . AUG pg. 12
IBD continued research needed . . . DEC pg. 69
New IB variants are emerging . . . JAN pg. 6
New technique recovers flu virus from water . . . JAN pg. 6
Yolk and serum titers correlate well . . . JAN pg. 10
Sudden death turkey problem . . . APR pg. 46
New strep infection reported in ducks . . . MAR pg. 40
Poult paralysis may be vitamin lack . . . MAR pg. 40
Chick mortality causes examined . . . MAY pg. 36
Computer assisted image analysis . . . APR pg. 42
Bursal disease variants cause broiler problems . . . FEB pg. 6
Reovirus vaccine effective . . . FEB pg. 8
Coccidiosis, other disease interactions . . . MAR pg. 26
Some mycotoxins may perpetuate leg weakness . . . MAR pg. 6
Anticoccidials don't precipitate other diseases . . . MAR pg. 10
Disease more severe with virus combination . . . MAR pg. 6
Bone and kidney problems from low phosphorus . . . MAR pg. 8
Mycotoxin situation now more complex . . . MAR pg. 39
Some questions, answers on chick anemia agent . . . JUL pg. 12
Early protection needed against turkey coryza . . . APR pg. 9
More bacteria involved in poult enteritis . . . APR pg. 9
Gumboro variant isolated from Leghorn pullets . . . APR pg. 6
Spiking mortality cause investigated . . . MAY pg. 38
Fusarium toxicosis suspect in waterfowl . . . APR pg. 45
Protein lack did not affect cholera immunity . . . MAY pg. 8
Challenge to AI-immune birds may cause variants . . . MAY pg. 10
Modified LT viruses may revert to virulence . . . MAY pg. 10
Feed and water in effective drug usage . . . JUN pg. 33
Bacteria control campylobacter . . . JUN pg. 34
Coryza reported in California broilers . . . JUN pg. 5
Need strict measures to curb mycoplasma . . . JUL pg. 35
Some fusarium strains can cause problems . . . JUN pg. 6
Enteric bronchitis strain widespread in body . . . JUN pg. 5
Need strict measures to curb mycoplasma . . . JUL pg. 35
Flu viral replication also involves kidneys . . . JUL pg. 8
Better criteria needed to detect osteomyelitis . . . JUL pg. 7
Turkey hemorrhagic enteritis changing . . . JUL pg. 10
Amprolium cut mortality in skip-a-day programs . . . AUG pg. 8
Newcastle virus replicates in immune birds . . . AUG pg. 6
Dual infection found in pullets, layers . . . AUG pg. 82
Hepatitis associated with quail bronchitis . . . OCT pg. 6
MG-caused encephalitis reported in California . . . OCT pg. 8
Botulism a threat . . . DEC pg. 69
Important to control stress in breeders . . . SEP pg. 6
T-2 toxin effects differ in ducks, chickens . . . SEP pg. 8
Coccidiosis may interact with other agents . . . SEP pg. 10
Management can affect hemorrhage syndrome . . . SEP pg. 10
New organism affecting poults needs study . . . SEP pg. 10
Tumors, leukosis important economic problems . . . DEC pg. 24
Hen mortality lowest in cages . . . DEC pg. 68
Dutch have rules about deep litter . . . DEC pg. 70
Fusarium mycotoxin can be immunosupressive . . . DEC pg. 6
Green liver not always due to osteomyelitis . . . DEC pg. 7
Botulism a threat . . . DEC pg. 69
Swollen heads in broiler breeders . . . DEC pg. 71
IBD continued research needed . . . DEC pg. 69
Subclinical anemia agent infection costly . . . DEC pg. 6
Anatipestifer infection, conditions predispose . . . DEC pg. 8
Birds can carry Lyme disease . . . DEC pg. 8
Salmonellae:
Severe salmonellosis reported from Mexico . . . MAR pg. 6
...control in grow-out . . . JAN pg. 24
...control costly . . . MAR pg. 6
IBD increases severity of salmonellosis . . . MAY pg. 11
Stress important in, control . . . JUN pg. 35
...isolated from organs of infected hens . . . OCT pg. 6
Vaccines:
live virus production . . . MAR pg. 22
CU fowl cholera, still performs well . . . DEC pg. 7
Feed based Newcastle, in Maylasia . . . SEP pg. 35
Know the risks with F strain . . . OCT pg. 6
Hemorrhagic enteritis, proves effective . . . APR pg. 9
New Newcastle, results encouraging . . . AUG pg. 6
Vaccination:
Proper drinking water medication and . . . DEC pg. 10
Reovirus, requires caution . . . OCT pg. 36
Maternal antibody in IBD . . . JUL pg. 37
Embryo, of turkeys shows promise . . . JUL pg. 6
Monitor reactions to . . . JUL pg. 6
Is, actually occurring? . . . JUN pg. 34
Breeder, the best it can be? . . . MAY pg. 36
...programs for poultry health . . . MAR pg. 14
Principles of breeder, programs . . . MAR pg. 14

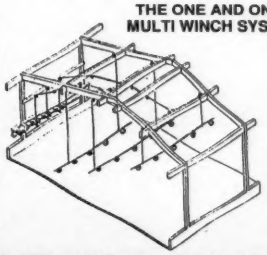
TURKEYS

Pound heavier turkeys with intermittent light . . . JAN pg. 12
Toe nail clipping effects on tom turkeys . . . JAN pg. 12
Sudden death turkey problem . . . APR pg. 46
Step-down step-up light for turkey breeder hens . . . FEB pg. 6
Feeding virginiamycin improved turkey weights . . . FEB pg. 10
Time required to recycle turkey breeder toms . . . MAY pg. 11
Rotate between barns to cut turkey broodies . . . MAR pg. 10
Early protection needed against turkey coryza . . . APR pg. 9
Feed restriction of turkey breeder hens . . . APR pg. 10
New turkey ranch to grow 900,000 birds a year . . . APR pg. 12
Day length affected tom turkey growth . . . APR pg. 47
Control of dust in turkey houses . . . JUL pg. 37
Newer anticoccidials best for turkeys . . . JUN pg. 6
Pellets improved feed efficiency of turkeys . . . JUN pg. 5
Protozoan parasites of turkeys still important . . . AUG pg. 72
Turkey feed efficiency less on increasing light . . . AUG pg. 6
Late turkey losses cut feed efficiency . . . SEP pg. 12
Enzymes improved lower protein turkey feed . . . SEP pg. 10
Management can affect hemorrhage syndrome . . . SEP pg. 10
Temperatures affect air conditions for turkeys . . . OCT pg. 7
Some ideas on husbandry, space, comfort needs . . . OCT pg. 10
Green livers not always due to osteomyelitis . . . DEC pg. 7
Poults:
Breeder management for vigorous . . . NOV pg. 28
Equipment changes can bother . . . DEC pg. 70
Prevent overheating of, in transit . . . MAR pg. 40
How to handle tipover . . . MAR pg. 39
....paralysis may be vitamin lack . . . MAR pg. 40
Getting, to eat . . . MAY pg. 36
First day heat for, critical . . . AUG pg. 82
New organism affecting, needs study . . . SEP pg. 10

G.J. ENGINEERING DESIGN
P.O. Box 6973
Beverly Hills CA 90212-6973 U.S.A.

THE ONE AND ONLY
MULTI WINCH SYSTEM

The winch that has five years experience and there are many of them in EUROPE, USA, ISRAEL. The price that you pay for the winch is almost the same price you pay now for hand winches + curtain winches.



The winch that will lift any line to any height separately with only one motor. Also included 12VDC winch with back-up system for curtains or shutters.

THERE IS NOTHING LIKE IT IN THE MARKET
COME TO VISIT US IN BOOTH 245 AT THE ATLANTA SHOW
Tel: 310-550-6267 Fax: 310-550-0624
Circle No. 34 on Inquiry Card